



US005739245A

United States Patent [19]

Lübbers et al.

[11] **Patent Number:** 5,739,245[45] **Date of Patent:** Apr. 14, 1998

[54] **PLASTICS WITH A CONTENT OF SILANE, ETHER, URETHANE AND UREA GROUPS AND THEIR USE AS DENTAL COMPOSITION**

[75] **Inventors:** Dierk Lübbers; Wolfgang Mühlbauer, both of Hamburg, Germany

[73] **Assignee:** Ernst Mühlbauer KG, Hamburg, Germany

[21] **Appl. No.:** 522,359

[22] **PCT Filed:** Mar. 2, 1994

[86] **PCT No.:** PCT/EP94/00607

§ 371 Date: Nov. 13, 1995

§ 102(e) Date: Nov. 13, 1995

[87] **PCT Pub. No.:** WO94/20560

PCT Pub. Date: Sep. 15, 1994

[30] **Foreign Application Priority Data**

Mar. 5, 1993 [DE] Germany 43 07 024.8

[51] **Int. Cl.⁶** C08G 18/38

[52] **U.S. Cl.** 528/28; 528/29

[58] **Field of Search** 528/28, 29

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,798,878 1/1989 Brinkmann et al. 528/28

5,095,045 3/1992 Winkel et al. 523/115
5,118,290 6/1992 Müller et al. 433/48

FOREIGN PATENT DOCUMENTS

0170865A1 2/1986 European Pat. Off. C08G 18/10
0410199A2 1/1991 European Pat. Off. C08L 83/08
3636974A1 5/1988 Germany C08G 18/10

OTHER PUBLICATIONS

International Search Report.

Primary Examiner—Ralph H. Dean

Attorney, Agent, or Firm—Arnold, White & Durkee

[57] **ABSTRACT**

Plastics with at least one polyaddition product which contains silane, ether, urethane and optionally urea groups and has the following features: a content of terminally located alkoxyisilyl groups of the formula $\text{—NR—(CH}_2\text{)}_m\text{—SiR}^1\text{R}^2\text{R}^3$, in which m is the number 3, R is hydrogen or a group of the formula $\text{—(CH}_2\text{)}_m\text{—SiR}^1\text{R}^2\text{R}^3$ and at least one of the groups R^1 , R^2 and R^3 is a group of the formula $\text{—(O—C}_p\text{H}_{2p})_q\text{—O—A—R}^4$, in which p is the number 3, q is a number in the range from 1 to 100 and A is a single bond and R^4 is an organic radical defined in more detail; and the remaining groups R^1 , R^2 and R^3 are methyl, ethyl or C_1 - to C_4 -alkoxy, the plastics furthermore comprising at least one catalyst for condensation of the silane groups, are suitable as impression, duplicating and modelling compositions, in particular for dental purposes.

12 Claims, No Drawings